

AMENDMENTS TO THE CLAIMS:RECEIVED
CENTRAL FAX CENTER

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What is claimed is:

1. (Currently Amended) A process for making a gradient material, comprising the steps of:
employing a screw extruder system having comprising material rate input conditions, operating conditions, and hardware element configurations; and,
employing multiple feed streams of raw ingredients at feed rates for compounding into a composite material;
introducing disturbances into at least one of the feed streams by altering at least one of the material rate input conditions, and the operating conditions, or in conjunction with a predetermined hardware element configuration of the hardware element configurations; and
producing a final material comprising at least a segment comprising a compositional gradient in an architecture of the composite material,
wherein said final material is a gradient material is formed by the screw extruder system.
2. (Original) The process of claim 1, wherein the screw extruder system comprises a twin screw extruder system.
3. (Currently Amended) The process of claim 2, wherein the disturbances are selected from at least one of the group of step disturbances, linear ramp disturbances, and non-linear ramp disturbances, or a combination thereof.

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4. (Currently Amended) The process of claim 3 1, wherein said at least one of the material rate input conditions is disturbed.
5. (Currently Amended) The process of claim 4 1, wherein the said at least one of the material rate input conditions comprises at least one ingredient feeding rate.
6. (Currently Amended) The process of claim 3 1, wherein at least one of said operating conditions is disturbed.
7. (Currently Amended) The process of claim 6 1, wherein the said at least one of said operating conditions is selected from the group of a screw speed, system temperature, system pressure, or a combination thereof.
8. The process of claim 7, wherein the at least one operating condition comprises the screw speed.
9. (Currently Amended) The process of claim 2, wherein the hardware element configurations are selected from at least one of the group of a screw geometry, die geometry, and ingredient feeding locations, or a combination thereof.
10. (New) The process of claim 1, wherein the composite material is an intermediate material formed in making the gradient material.